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TREE PLANTING

Easy steps to follow

aSB435
.T74



U.S. Department of Agriculture • Soil Conservation Service
P.O. Box 50004 • Honolulu, Hawaii 96850

Protect and Care

Trees are marvelously adapted to living and thriving on earth. They tolerate storms, floods, droughts, temperature extremes, many insects and diseases, grazing, climbing, carving, trampling, and other stresses. Despite such obstacles, some trees grow to be the oldest and largest living organism living on earth.

But trees do have limitations. They cannot express their pain when injured. They cannot go inside when the ozone count gets too high. Of all of the earth's inhabitants, human beings are the greatest source of damage and stress to trees. People are also the most capable of learning how to make life easier and better for trees, whether they are newly planted trees or established old friends. Here are some ways people can help:

- Guard roots during the construction of nearby buildings and roads.
- Protect against soil compaction.
- Prevent injuries.
- Fight pollution (which hurts trees, too)!
- Prune properly.
- Protect from grazing livestock.
- Water during dry spells.
- Manage woodlands for maximum growth and health.

Source: *People and Trees Growing Together* by the USDA Forest Service



Environmental Factors to Consider

Minimum Temperature

Select a species suitable to the zone where you live. Elevation and exposure differences (the direction of the slope) within each zone can have an effect on the life span of a tree.

Moisture

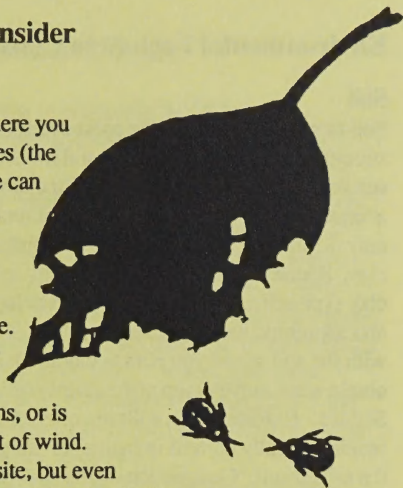
Each species can tolerate wet or dry growing conditions to a different degree. Special attention must be given to your selection if the site periodically is flooded, subjected to very dry conditions, or is continually exposed to the drying effect of wind. Watering, of course, can modify a dry site, but even when you irrigate it is important to know the optimal soil moisture requirement for your species. Also, do not overwater trees. They will "drown" if the soil is kept too wet. With heavy clay-type soils, water no more than 7-to-10 day intervals during dry summer weather. Light, sandy soils could be watered more frequently. Watering everyday or every other day is way too much.

Light

Shade tolerance is the term foresters use to rate the light requirements of each species. Some species, like the hawaiian koa, keawe, and ohia, require full sunlight which make them shade intolerant. Tolerant species, like most ferns, and the hawaiian holly grow well in shade. Others, like sandalwood and the hibiscus, are somewhere in between and are referred to as having intermediate tolerance. Don't make the mistake of planting your tree where it is mismatched with its need for light.

Pests

Every locality has its problems with a particular insect or disease. The best way to avoid trouble is to avoid the species that host these pests. In some cases, it is possible to buy varieties that have been bred for resistance to a disease. For example, where white pine blister rust is a problem, it is best to buy white pine that is certified to be blister rust resistant. Some species, such as golden rain tree and ginkgo, are known for their natural resistance to most pests. Others, such as American elm, are just the opposite.



Environmental Factors to Consider (continued)

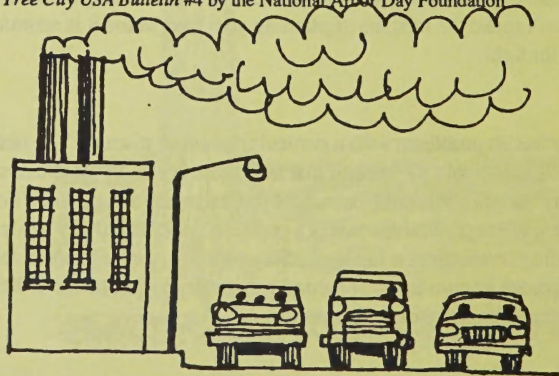
Soil

Soil factors are probably the most overlooked when selecting a tree. Soil depth, structure and pH, in addition to soil moisture, can make the difference between success or failure after planting. For example, deep-rooted species will need adequate soil depth for their structural roots, whereas shallow-rooted species may do all right on sites where soils thinly cover bedrock or a hard layer of clay. Species that need light and sandy soil should not be planted in rocky or clay-type soils. Also, each tree species has a tolerance range related to acidity and alkalinity, just as it does for shade. This requirement should be matched with the soil where you plan to plant. To learn about the soils in your area, obtain a soil survey map at the county office of the USDA Soil Conservation Service. Unfortunately, soils are often disturbed in urban areas and trees which would typically do well in native soil may struggle due to poor soil structure of the mixed soil. Compaction of any soil, due to heavy pedestrian or vehicle use, often reduces a tree's growth and size potential.

Air Pollution

Unfortunately, the ability of a species to tolerate air pollution is becoming more important. Chemicals in the air vary with localities, and in some cases, the accumulative effects of pollution are just beginning to show up. The best course of action is to ask a local professional if there are problems in your town, and if so, what species are affected. Similarly, salt spray from the ocean can be a problem locally and some species are more sensitive to it than others. Where these are problems, ask an arborist, nursery professional, forester or extension agent about which trees to avoid.

Source: *Tree City USA Bulletin #4* by the National Arbor Day Foundation



A Checklist for Preventing Hazard Trees

- Inspect trees for decay, wounds, cracks, or becoming unbalanced.
- Avoid planting brittle species where falling limbs could injure people or property.
- Prune trees when they are young and regularly thereafter always making the pruning cut outside the branch collar.
- Always plant the right tree in the right place. For example, avoid planting large-growing trees under power lines, or too close to your house. Plants within 15 feet of electric lines should not be higher than 15 feet at full growth. Also make sure the species selected matches the soil and other characteristics.
- Water deeply during dry periods, applying at least 1" of water per week.
- Erect barriers around or slightly beyond the dripline (area of land below the diameter of tree branches) of trees during construction. Insist that these root protection zones be honored by construction workers.
- Consider cabling or bracing weak forks or branches in older trees of high value. This is work for a professional arborist.
- Do not plant trees with narrowly-forked stems.
- Where a high value tree may be suspected of developing into a hazard, use landscaping to keep people at a safe distance. This may require techniques such as re-routing walks, moving patio furniture, or planting shrubs and hedges as barriers to foot traffic.

Source: *Tree City Bulletin #5* by the National Arbor Day Foundation

How to Plant a Tree in Your Neighborhood

1. Choose the right spot, and then loosen and blend all the soil in an area up to five times the diameter of the root ball, six to ten inches deep. In the center, dig a hole as deep as but wider than the root ball.
2. Remove the burlap or container. Place the tree in the hole on packed soil. Keep the root collar slightly above the surrounding soil.
3. Fill in the hole with soil.
4. Water the area thoroughly.
5. Stake the tree to keep it upright, but not tautly, so it still has room to move. Remove the stake one year after planting or before the second growing season.
6. Mulch, and mulch again, until you cover the entire area, except for six to eight inches around the tree trunk. Use a two to four inch layer of bark, leaves, gravel, or other mulch. (Mulching helps conserve moisture and discourage weeds.)

Source: *People and Trees Growing Together* by the USDA Forest Service



Plan

Have I chosen the right tree?

- Will the species grow well in this climate and soil?
- Did the seed or seedling come from my local area, giving it a better chance to survive?
- Is it the size and shape I want?

Have I chosen the right place to plant it?

- Is anything overhead or around it that might obstruct its growth?
- What kind of human activity takes place here?
- Are there good drainage and enough room for the roots to expand?

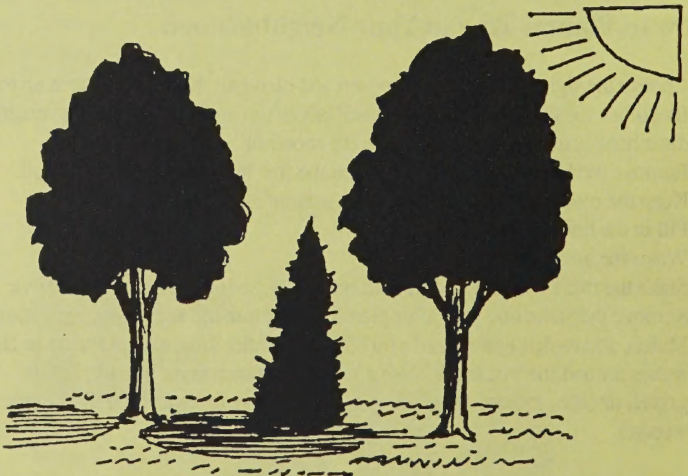
Do I have enough resources?

- How much money will I need?
- What materials and equipment will I use?
- How many people can I get to help?

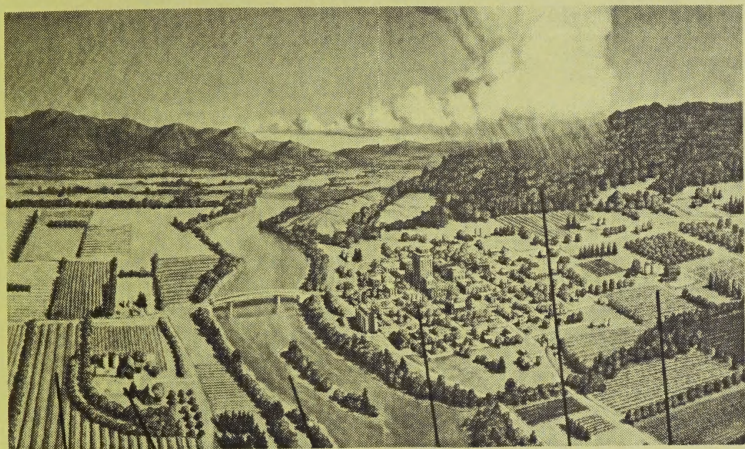
Do I have permission to plant here?

- What do the city and county ordinances say about who can plant what and where?
- Will my neighbors, or whoever shares the space, agree?

Source: *People and Trees Growing Together* by the USDA Forest Service



A world WITH trees . . .



A world WITHOUT trees . . .



Soil Conservation Service Offices in Hawaii

State Office

300 Ala Moana Blvd. #4316
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(808) 541-2600

Big Island RC&D Office

Kamuela Bus. Cntr. Bldg. 2nd Flr.
Kamuela, HI 96743
(808) 885-6057

Garden Island RC&D Office

3083 Akahi St. #204
Lihue, HI 96766
(808) 246-0091

Tri-Isle RC&D Office

70 S. High St. #209
Wailuku, HI 96793
(808) 242-2822

Hilo Field Office

154 Waianuenue Ave. #322
Hilo, HI 96720
(808) 961-5502

Honolulu Field Office

3049 Ualena St. #801
Honolulu, HI 96819
(808) 541-2667

Ho'olehua Field Office

Maunaloa Highway
Ho'olehua, HI 96729
(808) 567-6868

Kamuela Field Office

Kamuela Bus. Cntr. Bldg. 2nd Flr.
Kamuela, HI 96743
(808) 885-6602

Kealahakua Field Office

Ashikawa Bldg.
Kealahakua, HI 96750
(808) 332-2484

Lihue Field Office

4334 Rice St. #104
Lihue, HI 96766
(808) 245-6513

Plant Materials Center

Maunaloa Highway
Ho'olehua, HI 96729
(808) 567-6885

Wailuku Field Office

70 S. High St. #215
Wailuku, HI 96793
(808) 244-3729

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